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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/572,800	01/03/2007	Ingo Knudsen	KNUD3001/EJD	4914
23364 7590 01/12/2009 BACON & THOMAS, PLLC 625 SLATERS LANE FOURTH FLOOR ALEXANDRIA, VA 22314-1176				
EXAMINER				
FRANK, RODNEY T				
ART UNIT		PAPER NUMBER		
2856				
MAIL DATE		DELIVERY MODE		
01/12/2009		PAPER		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

**Application No.**

10/572,800

**Applicant(s)**

KNUDSEN ET AL.

**Examiner**

RODNEY T. FRANK

**Art Unit**

2856

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-16 and 18 is/are rejected.
- 7) ☒ Claim(s) 17 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 January 2007 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-946)
- 3) ☒ Information Disclosure Statement(s) (PTO/CI/CD)
- 4) ☐ Interview Summary (PTO-413)
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_
- Paper No(s)/Mail Date 3/22/06 & 3/28/07

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 10, 11, 13-15, and 18 are rejected under 35 U.S.C. 102(e) as being anticipated by Edvardsson (U.S. Patent Number 6,795,015). Edvardsson discloses a bottom reflector for a radar-based level gauge, which measures a level of a liquid stored in a tank by means of transmitting a microwave signal towards the surface of the liquid from the top of the tank, receiving the microwave signal as reflected against the surface of the liquid, and calculating the level of the liquid from the propagation time of the transmitted and reflected microwave signal, wherein the bottom reflector is adapted to be mounted close to the bottom of the tank and comprises a reflecting structure having a first reflection coefficient for the microwave signal when the level of the liquid is above the reflecting structure and a second reflection coefficient for the microwave signal when the level of the liquid is below the reflecting structure, wherein the first reflection coefficient is substantially lower than the second reflection coefficient (Please see the abstract).

3. With respect to claim 10, figures 1 and 2d illustrate an arrangement for measuring a fill level of a medium in a tank, including a sounding tube (13); a fill level measuring device (11), which works with microwave signals (see the abstract); and a deflecting device (27) for deflecting microwave signals in an end region of said sounding tube.

With respect to claim 11, the arrangement wherein said deflecting device includes a deflecting plate is illustrated in figure 2d.

With respect to claim 13, the arrangement wherein said deflecting device is secured externally on said sounding tube is illustrated in figure 2d.

With respect to claim 14, the arrangement wherein said deflecting device is arranged at a predetermined angle to a longitudinal axis of a sounding tube is illustrated in figure 2d.

With respect to claim 15, the arrangement wherein said deflecting device is an angular plate is illustrated in figure 2d.

With respect to claim 18, the arrangement used in the tank of a ship is disclosed in the abstract since the device is disclosed to be used in a tank.

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 12, and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Edvardsson.
6. With respect to claim 12, the device illustrated in figure 2d shows an arrangement wherein said deflecting device is secured on the outside of said sounding tube and not on the inside. However, the mere positioning of the securing means of the plate would not render the present device allowable in view of the prior art and one could simply have a securing means that is inside the tube that holds the deflector instead of using the presently illustrated one.

With respect to claim 16, while the type of level gauge use with the system is only disclosed to be a radar type gauge, it is well known in the art that such a gauge has various transmission horn types that can be used, such as a horn antenna, and thus the use of such a horn antenna to extend into the tube from the radar gauge would be obvious to one of ordinary skill in the art at the time of the invention.

#### ***Allowable Subject Matter***

7. Claim 17 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

#### ***Conclusion***

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The examiner has cited references deemed to be relevant to the general state of the art of the present invention.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to RODNEY T. FRANK whose telephone number is (571)272-2193. The examiner can normally be reached on M-F 9-5:30 p.m. EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hezron E. Williams can be reached on (571) 272-2208. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/R. T. F./  
Examiner, Art Unit 2856  
January 10, 2009  
/Hezron Williams/  
Supervisory Patent Examiner, Art Unit 2856